



OPEN LETTER

COVID-19 and food security in Africa: Building more resilient food systems [version 1; peer review: 2 approved]

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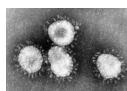
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Abstract

The COVID-19 pandemic has exposed the fragility of our food systems. Despite increased efficiencies in producing and supplying large volumes of food, our current food systems have generated multiple adverse outcomes comprising high greenhouse gas emissions, persistent hunger, and livelihood stress for farmers around the world. Nowhere else than in Africa have large numbers of people experienced more acutely these adverse shocks emanating from our food systems. Thus, building more resilient African food systems, which take a radical change of direction, is fundamentally a matter of survival. While there is broad consensus around a need for transformational change in food systems, what that entails is not always clear, and there are divergent views amongst experts on how to re-orient research priorities and agricultural solutions in ways that effectively address hunger and inequality while also protecting agrobiodiversity and the environment more broadly. This article engages with this debate and proposes an agricultural research for development agenda in Africa that balances technology transfer with realigning societal values, institutional arrangements, and policy decision-making towards the realization of greater sustainability and inclusive outcomes.

Keywords

Food security, COVID-19, food systems resilience, Africa



This article is included in the [Coronavirus \(COVID-19\)](#) collection.

Open Peer Review

Reviewer Status

	Invited Reviewers	
	1	2
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1 Christopher Huggins , University of Ottawa, Ottawa, Canada 2 Sheila Rao , Carleton University, Ottawa, Canada		
Any reports and responses or comments on the article can be found at the end of the article.		

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Introduction

Various actors point to threats of a looming global food crisis¹ due to the impacts of the novel coronavirus (COVID-19). In major African cities such as Nairobi, Kinshasa and Lagos where up to two-thirds of the population rely on the informal sector for their livelihoods, millions of people have been left without income to purchase food due to the abrupt loss of jobs that often provide daily earnings. In rural areas where agriculture is the main source of people's livelihoods, disruptions to transportation and logistics have made it difficult for producers (farmers, livestock keepers, fisherfolk) to sell their produce and to gain access to agro-veterinary inputs and services.

In Kenya, for instance, a country-wide curfew (7 PM-5 AM) and movement ban in and out of four counties, including Nairobi, have seen smallholder farmers who produce over 70% of the food consumed in the country face high transportation fees to deliver their produce to cities² while others scramble to find alternative markets. The effects of these restrictions might result in higher food prices, akin to experiences from the Ebola crisis in West Africa in 2014, which disrupted agricultural supply chains. Today, the COVID-19 pandemic puts a further strain on Africa's agricultural sector which is already facing unfavorable climate change patterns involving a higher frequency and intensity of extreme weather events such as droughts and floods, market and price volatility, and the recent desert locust outbreak in the Horn of Africa.

To address the immediate food security shocks brought about by the COVID-19 pandemic, multiple African governments have introduced relief measures to cushion the poorest and most vulnerable segments of their populations as well as to ensure that producers have affordable access to farm inputs.

Food system resilience paradigms

Beyond tackling the immediate concerns surrounding health and food emergencies, global food security leaders reiterate that the COVID-19 crisis offers an opportunity for decisive collective action towards building resilient food systems that enhance ecological sustainability and equitable outcomes³. The COVID-19 outbreak has brought to the fore some of the existing challenges facing our food systems. For example, while current food systems have become efficient at producing and supplying large volumes of food, they have generated multiple adverse outcomes comprising high greenhouse gas emissions, persistent hunger, and livelihood stress for farmers around the world⁴.

Nowhere else than in Africa have large numbers of people experienced more acutely these adverse shocks emanating from our food systems. Thus, building more resilient African food systems, which take a radical change of direction, is fundamentally a matter of survival. African Ministers of Agriculture, speaking on the impact of COVID-19 on food security and nutrition in Africa, have emphasized that developing sustainable and resilient food systems in Africa can address various negative influences beyond providing adequate food, including on public health, youth employment, education, economic development and social well-being⁵.

While there is broad consensus around a need for transformational change in food systems, what that entails is not always clear, and there are divergent views amongst experts on how to re-orient research priorities and agricultural solutions⁶ in ways that effectively address hunger and inequality while also protecting agrobiodiversity and the environment more broadly.

For some actors, resilient food systems are productive and efficient, and operate under the principles of climate-smart agriculture and sustainable intensification. Ideal food systems are also envisioned to support the inclusive participation and economic empowerment of especially marginalized food producers and agricultural workers such as through favorable integration into food value chains⁷. For other actors, resilient food systems promote diversified agroecological farming and landscapes, based on the principles of food sovereignty, and are intended to produce diversified outputs ranging from increased dietary diversity from locally produced food, minimal shocks from crop and market failures, and autonomy over how resources are used⁸. Further, it brings greater scrutiny and critical debate to normative assumptions surrounding food security as well as to the political capital and priorities that lock-in place current unsatisfactory practices in food systems⁹.

Both of these food systems resilience paradigms offer a wide diversity of proven agricultural technologies, practices and valuable insights that can enhance the resilience of Africa's producers and food systems. However, agricultural technology uptake amongst producers has often proved challenging and

¹ Food Security Information Network (FSIN) (2020). 2020 - *Global Report on Food Crises*.

² Munene, George (2020) 70% of Kenyan food locked out of Nairobi, forcing rural prices to nosedive. *Farmbiz Africa*: 23 April 2020.

³ High-Level Panel of Experts on Food Security and nutrition (HLPE) (2020) Interim Issues Paper on the Impact of COVID-19 on Food Security and Nutrition (FSN).

⁴ IPES-Food (2016). From Uniformity to Diversity: a Paradigm Shift from Industrial Agriculture to Diversified Agroecological Systems. International Panel of Experts on Sustainable Food systems. ww

⁵ African Union and FAO (2020). Meeting of African Ministers for Agriculture: Declaration on Food Security and Nutrition During the COVID-19 Pandemic.

⁶ Crossley, D. (2018). Big Questions and Radical Change: How Can Food and Farming Research Deliver for the Long-term Public Good? In Barling, L. (ed.) (2018). For whom? Questioning the Food and Farming Research Agenda. Food Ethics Council, London.

⁷ International Food Policy Research Institute. 2020. 2020 Global Food Policy Report: Building Inclusive Food Systems. Washington, DC: International Food Policy Research Institute. <https://doi.org/10.2499/9780896293670>.

⁸ IPES-Food (2016).

⁹ Anderson, M., Nisbett, N., Clément, C., Harris, J. (eds). (2010). The Political Economy of Food. *IDS Bulletin*, Vol. 50 (2).

many commendable innovations fail to expand their reach to large numbers of beneficiaries in a manner that is self-sustaining or long-lasting. There are multiple reasons for their limited impact at scale. Among them is that most efforts tend to narrowly focus on generating more produce or income from existing farms but pay relatively scarce attention to the different dimensions of agricultural systems constraints (mainly economic and institutional in nature), or whether innovations necessarily align with the specific constraints, interests and motivations of smallholder producers and other stakeholders¹⁰.

Building more food system resilience in Africa

Building more resilient food systems in Africa will require reconfigurations that balance technology transfer with realigning societal values, institutional arrangements, and policy decision-making towards the realization of greater sustainability and inclusive outcomes¹¹. This process will need to pay attention to and support the following elements:

- Offer low-cost or cost-effective agricultural innovations and practices that can enhance the resilience of Africa's resource-constrained producers to hedge safely against risks in environments where they are routinely subject to multiple unpredictable shocks and outcomes (e.g., crop loss, market failure).
- Build the agency of individuals and communities to foster ownership in the management and control of such agricultural innovations, as well as to advocate for their own priorities and interests more effectively, beyond the short-term duration of typical agricultural development interventions.
- Engage with decision-makers to advocate for the implementation of strong institutional or policy mechanisms that support context-appropriate agricultural solutions and can enhance resilience in Africa's food systems.
- Support research and learning that informs African food producers and consumers about the value of strengthening food systems resilience in a manner that provides nutritious and healthy food while delivering livelihood benefits to farmers and promoting sustainable agricultural practices.

When taken together, these elements can help to reposition agricultural interventions to enhance food systems resilience impact in Africa. Various actors and initiatives are already working towards this agenda. However, their efforts often face

enormous structural constraints and struggle to gain the necessary political and financial support needed to meaningfully expand their impact at scale.

For example, Bioversity International and the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) have supported the establishment and capacity-enhancement of community seed banks in Uganda, Kenya and Uganda¹². This work aims to lend greater to farmers' social seed networks, commonly referred to as informal seed systems, which in most parts of Africa supply up to 80% of the seeds grown by smallholder farmers. These community seed banks serve multiple key functions. Among them is *in-situ* conservation of local plant genetic resources, and access to greater varietal diversity of seeds and planting materials acquired from national and regional gene banks and farmer-to-farmer exchanges. Despite this vital role that informal seed systems play in the production and distribution of a vast majority of the seeds used by Africa's smallholder farmers, they are often overlooked in dominant seed system development endeavors which largely favor the expansion and commercialization of formal seed systems¹³.

Similarly, the Alliance for Food Sovereignty in Africa (AFSA), one of Africa's biggest civil society movements, is involved in an advocacy campaign for agroecology across Africa. Agroecology seeks to (re)design farming systems in ways that maximize agrobiodiversity using a wide range of crops, seed varieties, and farm animals, as part of a strategy to stabilize food supply against climatic variability and seasonal shortages, while building healthy agro-ecosystems¹⁴. For AFSA, agroecology should focus on building upon Africa's diverse food systems and traditional farming practices, while ensuring that farmers are in control of all aspects of food production. While AFSA has seen increased recognition in some global policy arenas, the movement faces difficulty accessing critical national and regional policy spaces that can facilitate the implementation of some of its agroecology efforts¹⁵. To them, African agricultural policymaking is biased towards intensifying the production of staple crops, using a narrow range of agrochemicals and improved seeds as evident in multiple Farmer Input Subsidy Programmes¹⁶.

¹⁰ Schut, M., Asten, P., Okafo, C., Hicintuka, C., *et al.* (2016). Sustainable Intensification of Agricultural Systems in the Central African Highlands: The need for Institutional Innovation. *Agricultural Systems* 145, 165–176.

¹¹ Hall, A. and Dijkman, J. (2019). Public Agricultural Research in an Era of Transformation: The Challenge of Agri-Food System Innovation. Rome and Canberra: CGIAR Independent Science and Partnership Council (ISPC) Secretariat and Commonwealth Scientific and Industrial Research Organisation (CSIRO), IX + 67 pp.

¹² Recha, J., Mungai C., and Mutsami, C. (2019). The Future of Banking is in Seeds: Hoima district Establishes a Community Seedbank to Strengthen Farmers' Adaptive Capacity. <https://ccafs.cgiar.org/>

¹³ Westengen, O.T., Haug, R., Guthiga, P. and Macharia, E. (2019). Governing Seeds in East Africa in the Face of Climate Change: Assessing Political and Social Outcomes. *Front. Sustain. Food Syst.* 3:53. doi: 10.3389/fsufs.2019.00053.

¹⁴ IPES-Food (2016).

¹⁵ AFSA (2020). Alliance for Food Sovereignty in Africa: Strategic Plan 2020–2024 Five Years For Agroecology (FYFA). <https://afsafira.org/>.

¹⁶ AFSA. (2017). A Study of Policies, Frameworks And Mechanisms Related to Agroecology And Sustainable Food Systems In Africa. Kampala, Uganda.

As Africa's policy-makers grapple with how to meet the food security demands of their nations considering disruptions caused by the COVID-19 pandemic, now is also a time to consider system-wide reconfigurations that can build greater resilience in local and national food systems. Evidence from Africa-based organizations and movements demonstrate that investing in approaches that build the agency of producers and their communities to improve their agricultural practices can guarantee the stable supply of healthy and nutritious food. These efforts can help feed Africa adequately and

sustainably, but they will need much greater political and financial support.

Data availability

No data are associated with this article.

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Open Peer Review

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Version 1

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Sheila Rao 

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- Overall, this article raises concerns over a looming food crisis in the Sub-Saharan Africa (SSA) region as a result of the global COVID-19 pandemic. The author argues that increasing food insecurity in both urban and rural populations is resulting from declining food production, reduction in transportation services and a loss of thousands of jobs, largely in the informal labour sector.
- The author argues for a radical shift in policy and research direction for addressing these pressing challenges and suggests building more resilient food systems that overcome underlying bottlenecks such as: improving public health services, access to education and youth unemployment. The author describes varying approaches to building resilient food systems, through food sovereignty, agro-ecology and through improved productivity and efficiency but argues that these approaches often result in narrowed outcomes that are focused on economic gains.
- The author makes a number of recommendations for building more resilient food systems that could withstand future shocks and uncertainties, and that could mitigate the long-term impact of the current global pandemic. The article makes a strong case for shifting attention from technologically-focused innovations to cost-effective, demand driven strategies that consider individuals' and communities' agency, their control and ownership over innovations and an overall more holistic approach to multi-level decision making, learning and education.
- The author suggests that a radical or transformational change is necessary for future resilient food systems across the SSA region. The analysis could pay further attention to how substantive structural changes are needed. For example, analysis of financial and political actors that support current and future scalable and technologically-driven initiatives could identify specific investment needs around integrating resilience strategies into food systems.
- Considerations for the politics of knowledge and power relations behind agenda-setting and policy formations are also necessary to ensure that strategies are designed to meet the long-term, sustainable needs of both rural and urban dwellers in SSA. An emphasis on the processes

involved in building resilient food systems could highlight approaches that include those affected the most, (for example, those based in the informal labour sector) in collaborative, co-design planning, research and implementation.

- Shocks brought on by the pandemic also pose specific risks to different actors within food value chains. Informal food vendors, material suppliers, factory workers (in food processing) for example, are all vulnerable to contracting the virus but who also risk losing their livelihoods without continuing their work in some capacity. Social protection measures are a necessary factor in establishing future food systems that benefit everyone. Further to this, context-specific, intersectional considerations (including gender, sexuality, race, class, ethnicity and able-bodiedness, etc.) in the analysis could further the discussion around social and economic inequalities within food systems, and the exacerbating impact of the pandemic on the most marginalized populations.

References

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2. Whitfield S: Adapting to Climate Uncertainty in African Agriculture. 2015. [Publisher Full Text](#)

Is the rationale for the Open Letter provided in sufficient detail?

Yes

Does the article adequately reference differing views and opinions?

Yes

Are all factual statements correct, and are statements and arguments made adequately supported by citations?

Yes

Is the Open Letter written in accessible language?

Yes

Where applicable, are recommendations and next steps explained clearly for others to follow?

Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Social Anthropology of nutrition and agricultural development and gender.

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Reviewer Report 10 July 2020

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Christopher Huggins 

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This is a timely and well-argued piece on a very important set of issues. Only a few minor revisions are needed, in my view. The following points are offered in the spirit of constructive criticism:

The article talks of “agricultural technology uptake” and “limited impact at scale”, providing some reasons why this is the case. However, it doesn’t emphasize the overall political economy of corporate and ‘donor’ involvement in African food systems. To some extent it covers this in the penultimate paragraph: “African agricultural policymaking is biased towards intensifying the production of staple crops, using a narrow range of agrochemicals and improved seeds as evident in multiple Farmer Input Subsidy Programmes”. Nevertheless, perhaps a few sentences on the involvement by agribusiness multinational companies (providing seeds, agrichemical inputs, etc) and philanthropic-public-private partnerships would make for a more critical analysis. Sources such as IPES-Food (2020) *Money Flows: What Is Holding Back Investment In Agroecological Research For Africa?* argues that “As many as 85% of projects funded by the BMGF [Bill and Melinda Gates Foundation] and more than 70% of projects carried out by Kenyan research institutes were limited to supporting industrial agriculture and/or increasing its efficiency via targeted approaches such as improved pesticide practices, livestock vaccines or reductions in post-harvest losses”, rather than more agroecological practices which might address the issues mentioned in this article. A little more critical attention to the political economy of agricultural research – mentioning perhaps the “Green Revolution for Africa” paradigm – would better align the article with its important recommendation that stakeholders “Build the agency of individuals and communities to foster ownership in the management and control of such agricultural innovations”.

Personally, I would argue for a few sentences at least on the broader agrarian issues involved – based on a brief discussion of (gendered) labour, capital (often invested in patented, profit-making technologies such as biotechnologies) and land. Issues around women’s access to land especially, and land acquisition by large-scale corporations, might deserve attention.

The following are more minor issues:

The Abstract talks of the “fragility of our food systems”. While the reader might assume “our” means “African”, it could also be taken to mean “global”. The author should specify.

The first sentence of the introduction mentions “Various actors” but only includes 1 reference. Another recent reference would be Oxfam’s report ‘The hunger virus: how COVID-19 is fuelling hunger in a hungry world’
<https://www.oxfam.org/en/press-releases/12000-people-day-could-die-covid-19-linked-hunger-end-year-p>

“while current food systems have become efficient at producing and supplying large volumes of food, they have generated multiple adverse outcomes comprising high greenhouse gas emissions, persistent hunger, and livelihood stress for farmers around the world”. To give a broad sense of negative impacts,

the author might consider mentioning other environmental impacts (e.g. water pollution, soil degradation, loss of agrobiodiversity).

“it brings greater scrutiny and critical debate to normative assumptions” – what does the “it” in this sentence refer to? Scholarly and policy debates? The concept of resilience? The increased scrutiny of our food system due to covid-19 impacts?

“Among them is that most efforts tend to narrowly focus on generating more produce or income from existing farms but pay relatively scarce attention to the different dimensions of agricultural systems constraints” – misspelling of the last word. There is another misspelling (“constrains”) later in the article.

Is the rationale for the Open Letter provided in sufficient detail?

Yes

Does the article adequately reference differing views and opinions?

Yes

Are all factual statements correct, and are statements and arguments made adequately supported by citations?

Yes

Is the Open Letter written in accessible language?

Yes

Where applicable, are recommendations and next steps explained clearly for others to follow?

Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Food security; political economy of natural resources management in East Africa; land reforms in East and Central Africa

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.
